

REMARKS

The Office Action of March 12, 2009 has been carefully studied. Claims 1, 2, 6, 7 and 21 currently appear in this application. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration and formal allowance of the claims.

Amendments to the Specification

The specification has been amended to delete Tables 1 and 2 because Tables 1 and 2 are identical to Tables 4 and 5, respectively. Tables 4 and 5 were mistakenly inserted into the specification of the basic International Application. Since Tables 1 and 2 are redundant, the present amendment deletes these tables and any references to them.

Art Rejections

Claims 1, 2, 6, 7 and 21 are rejected under U.S.C. 102(b) as being anticipated or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Yamamoto et al., US 5,137,723.

This rejection is respectfully traversed.

In response to the previous Office Action, applicant filed the declaration of Dr. NISHIMOTO in accordance with the Examiner's helpful suggestions to prove and demonstrate with experimental data the enzyme used in claim 1 is significantly different from the enzyme of Yamamoto, *i.e.*, RIAGase, in the levels of AA-5G and AA-6G as well as that of AA-2G.

The Examiner alleges that the scope of the declaration is limited to investigations of a single glucosyl donor, PINEDEX #1, which is described as “a partial starch hydrolysate commercialized by Matsutani Chemical Industries, Ltd.” since the elected species for the glucosyl donor is liquefied starch, a broad term that is not particularly defined in the specification and that reasonably encompasses suspensions and solutions containing unaltered starch as well as starch that has been hydrolyzed to varying degrees. The Examiner thus alleges that the scope of the evidence provided in the NISHIMOTO declaration is not commensurate with that of the claimed method and therefore cannot serve to establish the properties of the enzyme employed in the claimed method across its entire scope, neither can it overcome the obviousness rejection.

The Examiner states, “The elected species and the glycosyl donor, “liquefied starch”, is broader than PINEDEX #1, which is described as ‘a partial starch hydrolysate, ’used as a glucosyl donor in the experiment of the NISHIMOTO declaration, and it is not clear what is “PINEDEX #1” used as a glucosyl donor in the experiment in the NISHIMOTO declaration.

However, as described below, PINEDEX #1 is maltodextrin, and there is no substantial difference between maltodextrin and “liquefied starch.” To demonstrate this, submitted herewith are copies of the following references:

Ref. 1: *J. Appl. Glycosci.* **50**:389-394 (2003) and

Ref. 2: *The Amylase Research Society of Japan*, .p. 1960198m Pergamon Press, 1988

Table 1 at page 390 of Reference 1 shows that PINEDEX #1 (Sample 2) is introduced as "Maltodextrin," and one of "Commercially available starch hydrolysates" commercialized by Matsutani (Japan), *i.e.*, Matsutani Chemical Industry Co. Ltd.

Reference 2 states as follows at the paragraph bridging pages 198 and 199:

2. Manufacture of dextrins: **For production of various dextrin products of low molecular weights from starch, liquefaction of starch is generally necessary.** Manufacture of **dextrins in general is carried out by liquefaction of starch** by bacterial α -amylase, followed by refining the liquefied starch solution and spray-drying.

The degree of hydrolysis expressed **as dextrose equivalence (D.E.) of commercial dextrins are usually in a range of from 3 to 25**, which depends on the utilization purpose of the dextrin. [emphasis added]

As described in Reference 2, various dextrins are produced by liquefaction of starch. Therefore, it is clear that there are no substantial differences between maltodextrin and "liquefied starch."

Furthermore, as described in Reference 2, **"dextrose equivalence (D.E.) of commercial dextrins are usually in a range of from 3 to 25."** The dextrose equivalence of PINEDEX #1 is 8.3, as shown in Table 1 at page 390 of Reference 1. It is therefore clear that PINEDEX #1 is a typical liquefied starch that is commercially available.

Because PINEDEX #1 is a typical liquefied starch, it is respectfully submitted that it was reasonable for NISHIMOTO to have used PINEDEX #1 as a liquefied starch in the experiments described in his declaration. Contrary to the Examiner's assertion, the scope of the NISHIMOTO declaration is of liquefied starch, which is the elected species for this application. Accordingly, it I respectfully submitted

that the evidence provided in the NISHIMOTO declaration is indeed commensurate with that of the claimed method, and therefore it is respectfully submitted that the NISHIMOTO declaration establishes the properties of the enzyme employed in the claimed method across the entire scope elected.


Submitted herewith is Reference #3, a pamphlet of PINEDEX by Matsutani Chemical Industry Co., Ltd., along with the English translation thereof.

PINEDEX #1 is one of very common liquefied starch commercially available in Japan.

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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